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SOME NEW OR OTHERWISE INTERESTING REPORTS OF LILIACEAE FROM THE SOUTHEASTERN STATES[1]

Edward T. Browne, Jr.

Several interesting plants in the Liliaceae have been found as a consequence of field work in the southeast. As might be expected, this family is one of the best represented ones in our herbaria, but it is still incompletely known.

One of these collections consisted of several specimens of *Aletris* collected by Dr. W. H. Duncan of the University of Georgia. Dr. Duncan found both white- and yellow-flowered *Aletris* plants growing in approximately equal numbers in the same population in Chatham Co., Georgia, and they appeared at first to be plants of *A. farinosa* L. and *A. lutea* Small, respectively.

Since perianth color and shape are the two most important characteristics for specific separation in the North American species of *Aletris*, the identifications appeared to be obvious. However, upon closer examination, it was discovered that in neither of these types was there semi-epigyny, one of the

[1]This paper was supported in part by grants from the Faculty Research Fund, Graduate School, University of Kentucky.

most outstanding floral characteristics of *A. farinosa*. Microscopic and macroscopic examination of leaves of these plants revealed that both exhibited the narrow hyaline margin which is typical of the leaves of *A. lutea*. From this information it has been concluded that this population consists of typical *A. lutea* and white-flowered individuals of *A. lutea*. Thus, the latter are hereby designated as a new color form as follows:

Aletris lutea Small, forma **albiflora** E. T. Browne, Jr., f. nov. Forma nova floribus albis.[2]

This new form differs from the typical form only in flower color. The perianth tube is cylindric with recurved tepals.

This is the first reported color form of North American *Aletris* species. Because of the importance attached to flower color in the identification to species of plants in this genus, careful review of the specimens presently deposited in herbaria will be necessary for proper determination. It is significant that *A. farinosa* has apparently not been collected in the Lower Coastal Plain of Georgia, and although these specimens are obviously those of a population of *A. lutea*, this latter species has not turned up in the collections made in connection with the Flora of the Carolinas Project which includes a geographic area in part not very far removed from this Chatham County locality (H. E. Ahles, personal communication).

Specimens cited: GEORGIA. Chatham Co. Open area, low ground at edge of cypress stand, 15.3 mi. W4°S of Savannah City Hall. Coastal Plain Province. *W. H. Duncan, 20982.* 13 June 1958.

The holotype has been retained in the Herbarium of the University of Georgia. Dr. Duncan has presented an isotype and a specimen of the typical form *(Duncan, 20980)* to the Herbarium of the University of Kentucky.

Another *Aletris* variant was observed in mixed populations of *A. lutea* and *A. obovata* Nash. These individuals had cream-colored flowers instead of yellow and white flowers as in *A. lutea* and *A. obovata*, respectively. The perianth tips of *A. lutea* are recurved while those of *A. obovata* are not. This variant is characterized by a perianth of intermediate color

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[2]Appreciation is expressed to Dr. W. L. Carr, Department of Ancient Languages, University of Kentucky, for the Latin diagnoses in this paper.

and shape but without recurved perianth tips. Since these plants were observed only in mixed populations of the two species previously referred to, or in the near vicinity of populations of both species, the variant individuals are strongly suggestive of probable interspecific hybridization between these two species. Therefore, this putative hybrid is designated in the following way:

Aletris × Tottenii E. T. Browne, Jr., hybr. nov. *Aletris × Tottenii*, hybrida naturalis nova inter *A. luteam* et *A. obovatam*. Herbae mediae inter species parentales. Folia basalibus rosettis, hyalino margine, colore sulfureo-viridi, lanceolata, 52-96.5 mm. longa et 6.2-11.5 mm. lata. Calami et bracteati racemi 5.1-7.7 dm. alti cum multis floribus. Flores horizontales aut prope horizontales, colore aliquantum vario inter ochroleucum et ebureum (cream-colored). Ultimae partes perianthorum non recurvatae. Forma et magnitudo tubae perianthi aliquantum variae inter species parentales.

Plants intermediate between the parental species. Perianth segment tips not recurved (perhaps appearing so in pressed material).

Specimens examined: GEORGIA — Berrien Co. Highway right of way, Ga. 135, 1.3 mi. S of Berrien-Atkinson Co. line. Flowers cream color. May 7, 1960. *Elizabeth M. and E. T. Browne, Jr. 2516;* Colquitt Co. Highway right of way, US 319, 0.1 mi. N of Colquitt-Thomas Co. line. Flowers varying in color from light to deep cream color in the three specimens collected at this locality. May 8, 1960. *Elizabeth M. and E. T. Browne, Jr. 2524.* (holotype, KY); Cook Co. Highway right of way, Ga. 76, 5.3 mi. N of Cook-Brooks Co. line. Flowers light cream color. May 7, 1960. *Elizabeth M. and E. T. Browne, Jr. 2519.*

This putative hybrid was first reported in the literature by Harper (1905, 1906). He did not name the hybrid, but he did suggest its hybrid nature. Since in form of the perianth there is a somewhat closer resemblance to *A. obovata* than to *A. lutea*, some botanists might suggest that this variant constitutes only a color form of *A. obovata*. However, this suggestion is not tenable since these plants are found only in mixed populations of *A. lutea* and *A. obovata* or in the near vicinity of pure populations of both species. In addition, while these species usually occur in separate populations, especially along highways they have become mixed presumably as the result of highway maintenance operations, and this fact has undoubtedly contributed to their hybridization. Apparently, the parental species are not highly interfertile since there are very few of the putative

hybrids to begin with, and there is no evidence to indicate that offspring are produced beyond the F_1 generation.

The putative hybrid, *Aletris* × *Tottenii*, has been named for Dr. Henry Roland Totten, Professor of Botany in the University of North Carolina, Chapel Hill.

A double-flowered form of *Lilium superbum* L. was found near Oakland, Garrett Co., Maryland, in 1954. Bulbs of this form were transplanted to Chapel Hill and Elon College, N. C., where they flowered the two following years. While this form is not as attractive as the typical form, it is worthy of mention since this is the first reported double-flowered variation of a native species of *Lilium*. As such, this new form is being designated as:

Lilium superbum L., forma **plenum** E. T. Browne, Jr., f. nov. Forma nova cum tepalis plenis.

In this double-flowered form some of the stamens have been changed entirely or in part to tepals. The pistil is unaffected, and plants of this form could, therefore, be fertile. This collection represents the only occurrence of this variation among several thousand individuals of this species observed at this locality and elsewhere by the writer in Maryland, Virginia, West Virginia, North Carolina and Kentucky.

Specimens cited: MARYLAND. Garrett Co. Near Oakland. July 6, 1954. *Edward T. Browne, Jr., s.n.* (holotype, NCU; isotype, KY).

A student in an undergraduate botany class has discovered a population of *Trillium pusillum* Michx. in Casey Co., Kentucky. This is the first report of this species from the state. The determination has been verified by Stanley J. Smith, New York State Museum, Albany. Mr. Smith writes that this species has been previously reported from only four other widely separated localities in the United States: the Chesapeake Bay region, the Carolinas, the Ozarks and the Sabine River region of Texas, and he feels that the Kentucky specimens are nearest those from the Ozarks, *T. pusillum* Michx., var. *ozarkanum* (Palmer and Steyerm.) Steyerm. (Stanley J. Smith, personal communication).

Specimen cited. KENTUCKY. Casey Co. Pricetown, 4 mi. S of Liberty and E of US 127. Open field, rocky soil. April 28, 1961. *Glenn W. Murphy, 92.* (KY).

In connection with a taxonomic monograph of the Liliaceae of Kentucky which the writer is undertaking preliminary to biosystematic studies in this family, several species

have been found in herbaria or collected which have apparently not been reported for the state. Among these species is *Smilacina stellata* (L.) Desf. which would be expected to occur in Kentucky on the basis of its distribution in adjacent states, but, according to the distribution given by Small (1933) and Fernald (1950) and the smaller works of McFarland (1942) and Braun (1943), the species does not occur in Kentucky. However, *S. stellata* is reported from Kentucky (as *Vagnera stellata*) in the second edition of Britton and Brown (1913), but it is not reported for Kentucky in the New Britton and Brown (Gleason, 1952). Although Galway (1945) indicates the presence of *S. stellata* in Kentucky on the distribution map of this species in her monograph of North American *Smilacina*, she does not cite any specimens from the state.

Specimens cited: KENTUCKY. Jefferson Co. In sylvis. Louisville, Ky. *C. Mohr, 2921.* (Annotated by Desma H. Galway, 1939; MO, 147191); Kentucky. (No county or other data given). 1840. *C. Short, s.n.* (GH).

Xerophyllum might be expected to occur in Kentucky based on its distribution in adjacent states. However, this writer has not collected any specimens of this genus in Kentucky although a considerable effort has been made to locate plants. One collection apparently made in the state has come to the writer's attention nevertheless. If the validity of this collection can be established, it will constitute a new state record since this genus is not given for Kentucky in any of the manuals, floras or papers of more limited extent.

On the sheet in question is an annotation label of K. J. Stone who has written: "*X. tenax* (Pursh) Nutt. Locality highly doubtful." *X. tenax* has a reported range from Wyoming to British Columbia and California (Abrams, 1940). On the other hand, *X. asphodeloides* (L.) Nutt. has a range from "Virginia to Georgia and Tennessee" (Fernald, 1950), and this fact would support the identification of this specimen as *X. asphodeloides*. In addition, in floral characteristics this specimen most closely approximates the latter species. Fernald (1950) points out that *X. asphodeloides*

also occurs on "sandy pinelands, New Jersey, Delaware and North Carolina." Situations similar to these, though of not the same geological origin, occur in various areas of west-central and western Kentucky, and it is not unlikely, therefore, that this specimen was collected in one of these places. It should be further pointed out that the place of collection, Bowling Green, is situated in the Barrens area of Kentucky.

Specimen cited: KENTUCKY. (Warren Co.) Bowling Green. 1903. *Sadie F. Price, s.n.* (MO).

Intensive field work has been under way in an attempt to relocate this species as well as *Smilacina stellata* in Kentucky. At this writing these efforts have so far proved futile. In regard to *Xerophyllum*, much acreage of the Barrens has been put into pasture and cultivation. It may be that both of these species, which in recent times have not been abundant, are now extinct or nearing this status in the state.

Fernald (1950) indicates that *Yucca Smalliana* Fern. is probably only introduced and escaping north of North Carolina and Tennessee. This species occurs widely in Kentucky, and in some instances, it is freely reproducing and persisting around abandoned homesites. Braun (1943) writes that *Y. filamentosa* L. is "occasional along roadsides and railroad tracks". The writer has not seen any specimens of *Y. filamentosa* in a natural state anywhere in Kentucky, and presumably it is actually *Y. Smalliana* to which this reference applies if these species are distinct. This latter species is not recorded by Fernald (1950), Gleason (1952), Small (1933), McFarland (1942) or Braun (1943) as occurring in Kentucky. While perhaps it may not be native to the state, *Y. Smalliana* should certainly be considered a member of the vascular flora of this area.

Specimens cited: KENTUCKY. Barren Co. US 68, 0.8 mi. E of Barren-Warren Co. line. July 15, 1961. *Elizabeth M. and E. T. Browne, Jr. 4570;* Boone Co. US 25, 5.2 mi. N of Boone-Kenton Co. line. Open field between highway and Southern Rwy. tracks. Scattered plants. July 8, 1961. *Elizabeth M. and E. T. Browne, Jr. 4469;* Boyle Co. US 68, just S of Boyle-Mercer Co. line at bridge. July 15, 1961. *Elizabeth M. and E. T. Browne, Jr. 4507;* Carter Co. Dry roadside cut about ½ mi. E of bridge over Tygarts Creek, Ky. 182. July 1, 1961. *Elizabeth M. and E. T. Browne, Jr. with J. C. Warden. 4421;* Edmonson Co. Ky. 259, 6.9

mi. E of junct. Ky. 185 and Ky. 70. Dry roadside bank. July 16, 1961. *Elizabeth M. and E. T. Browne, Jr. 4598;* Fayette Co. Lexington. Persisting and spreading after cultivation on vacant tract of land across the Southern Rwy. tracks from the passenger station near S. Broadway. July 6, 1961. *Elizabeth M. and E. T. Browne, Jr. 4460;* Grant Co. US 25, 6.8 mi. N of Grant-Scott Co. line. Open dry hillside. Plants of all ages. Very abundant. July 8, 1961. *Elizabeth M. and E. T. Browne, Jr. 4466;* Mercer Co. US 68, 11.3 mi. S of Mercer-Jessamine Co. line. Roadside. July 15, 1961. *Elizabeth M. and E. T. Browne, Jr. 4504;* Scott Co. US 25, 5.4 mi. N of Scott-Fayette Co. line. Open roadside. July 8, 1961. *Elizabeth M. and E. T. Browne, Jr. 4462;* Woodford Co. US 421, 3.6 mi. S of Woodford-Franklin Co. line. Steep road fill. Several plants in row as if planted. July 9, 1961. *Elizabeth M. and E. T. Browne, Jr. 4496.*

Allium ampeloprasum L. has been collected in three counties of west-central Kentucky. In each instance, these plants were found growing without cultivation apparently having originated from this source. As this species has not been previously reported from Kentucky, its mention here is justified. Undoubtedly, there are other localities in the state, other than those cited below, where this species is naturalized, but no other reports are available from elsewhere. As far as this writer is able to determine, this is apparently the first report of the occurrence of the typical variety of *A. ampeloprasum* in the United States as an escape (Small, 1933; Fernald, 1950; Gleason, 1952) since Fernald describes var. *atroviolaceum* (Boiss.) Regel as having "deep purple" flowers and Gleason, giving no varietal status to this, describes the flowers as "purple-red". The flowers of my collections were of several stages of development, and their color was light lavender becoming slightly darker upon drying.

Specimens cited: KENTUCKY. Butler Co. Ky. 185, 6.2 mi. N of ferry over Green River. Wet road cut. July 16, 1961. *Elizabeth M. and E. T. Browne, Jr. 4595;* Edmonson Co. Ky. 259, 6.9 mi. E of junct. Ky. 185 and Ky. 70. Dry roadside bank. July 16, 1961. *Elizabeth M. and E. T. Browne, Jr. 4599;* Warren Co. Ky. 67, 3.2 mi. E of junct. Ky. 67 and Ky. 263. Open roadside. July 16, 1961. *Elizabeth M. and E. T. Browne, Jr. 4591.*

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kindly read the manuscript. — UNIVERSITY OF KENTUCKY, LEXINGTON, KENTUCKY.

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HYBRID ASPENS IN THE LOWER PENINSULA OF MICHIGAN[1]

BURTON V. BARNES[2]

INTRODUCTION

One explanation for the polymorphism and diversity found in the aspens, *Populus tremuloides* Michaux and *P. grandidentata* Michx., is an exchange of genes between these species through hybridization and backcrossing. Anderson (1949) and others have demonstrated the importance of introgression as a vital force in evolution. In a study of the natural variation and clonal development of the aspens in the Lower Peninsula of Michigan I searched for hybrids on two research sites on forest land of the University of Michi-

[1]Information from the author's dissertation submitted in partial fulfillment of the requirements of the degree of Doctor of Philosophy at the University of Michigan, Ann Arbor.

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